

Pertussis Fact Sheet

1. **What is Pertussis?** - Pertussis, or whooping cough, is a highly contagious disease involving the lungs and airways. It is caused by the bacteria *Bordetella pertussis* which is found in the nose, mouth, and throat of an infected person. More than 200 cases are reported each year in Pennsylvania, mostly in children. Other cases of Pertussis occur but are not diagnosed, especially in adults, since illness in adults may be milder than in children.
2. **Who gets Pertussis?** - Pertussis can occur at any age, but is usually seen in children. There has been an overall increase in cases in recent years, with a disproportionate increase in adolescents and adults.
3. **How do you get Pertussis?** - People get Pertussis by breathing in airborne droplets from the nose and mouth of already infected persons. Older children and adults may have milder disease and may spread it to unimmunized infants and young children. An infected person is most contagious early in the course of illness. If untreated, an infected person can spread Pertussis for up to 3 weeks after coughing starts. Antibiotic treatment limits contagiousness to five days after treatment is started.
4. **How soon do symptoms start?** - Symptoms usually start 5 to 10 days after exposure to another person with the disease, but may take as long as 20 days to develop.
5. **What are the symptoms of Pertussis?** - Pertussis begins as a mild illness like the common cold. Sneezing, runny nose, low-grade fever, and mild coughing progress to severe coughing. Some persons have episodes of rapid coughing followed by a high-pitched whoop as they take a deep breath. However, not everyone with Pertussis has a whooping cough, especially very young infants. Severe cough may continue for many weeks despite proper treatment. Symptoms may be milder in older children and adults. However, Pertussis can be a serious disease, especially in infants and young children. Complications can include pneumonia, dehydration, seizures, encephalopathy (a disorder of the brain), and death.
6. **How is Pertussis diagnosed?** - Diagnosis is based on the recovery of the bacteria from nasopharyngeal specimens obtained early in the course of the disease.
7. **How is Pertussis treated?** - Antibiotics may be useful early in the disease. Antibiotics are particularly helpful in reducing spread of the disease to other persons. However, once severe symptoms begin, antibiotics may not have any effect on symptoms.
8. **How can Pertussis be prevented?**
 - a. The single best control measure is adequate vaccination of children. The Pertussis vaccine is usually given together with other vaccines such as diphtheria and tetanus (DTaP vaccine). Recent changes in the Pertussis vaccine have improved its safety while keeping a high level of protection. Children should be routinely immunized at ages 2, 4,



6, and 15-18 months, and again at 4-6 years. In Pennsylvania and many other states, adequate Pertussis immunization is required for school entry.

- b. In 2005, a new combination tetanus, diphtheria and acellular Pertussis vaccine (Tdap) was approved for use in adolescents and adults. Tdap is recommended for use in all 11-12 year olds and 15 year olds at high school entry. Adults under 65 years of age should receive a single dose of Tdap to replace a single dose of tetanus-diphtheria (Td) for booster immunization against tetanus, diphtheria, and Pertussis if they received their most recent Td \geq 10 years earlier. Tdap may be given at an interval shorter than 10 years since receipt of the last Td to protect against Pertussis. There is no Pertussis vaccine approved for adults aged 65 years and older.
- c. Adults under 65 years of age who have or anticipate having close contact with an infant < 12 months of age (e.g., parents, childcare providers, health-care providers) should receive a single dose of Tdap. An interval of 2 years or more since the most recent Td vaccine is suggested; shorter intervals may be used. Ideally, Tdap should be given at least 1 month before beginning contact with the infant. Women should receive a dose of Tdap immediately after giving birth to a child if they have not previously received Tdap. Any woman who might become pregnant is encouraged to receive a single dose of Tdap.
- d. All healthcare personnel (HCP), regardless of age, should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap and regardless of the time since last Td dose. Priority should be given to vaccination of health-care personnel with direct contact with infants aged <12 months. Hospitals and ambulatory care facilities should provide Tdap for health-care personnel and use approaches that maximize vaccination rates such as education about the benefits of vaccination, convenient access, and provision of Tdap at no charge.
- e. When Pertussis does occur, preventive antibiotic treatment is sometimes recommended for household and other close contacts of the person with Pertussis.

9. For more information about Pertussis:

<http://www.cdc.gov/pertussis/about/index.html>

This fact sheet provides general information. Please contact your physician for specific clinical information.



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Pertussis (Whooping Cough)

<http://www.cdc.gov/pertussis/index.html>

Pertussis, also known as whooping cough, is a highly contagious respiratory disease. It is caused by the bacterium *Bordetella pertussis*.

Pertussis is known for uncontrollable, violent coughing which often makes it hard to breathe. After fits of many coughs, someone with pertussis often needs to take deep breathes which result in a "whooping" sound. Pertussis most commonly affects infants and young children and can be fatal, especially in babies less than 1 year of age.

The best way to protect against pertussis is immunization.

Causes and Transmission

<http://www.cdc.gov/pertussis/about/causes-transmission.html>

Causes

Pertussis, a respiratory illness commonly known as whooping cough, is a very contagious disease caused by a type of bacteria called *Bordetella pertussis*. These bacteria attach to the cilia (tiny, hair-like extensions) that line part of the upper respiratory system. The bacteria release toxins, which damage the cilia and cause inflammation (swelling).

Transmission

Pertussis is a very contagious disease only found in humans and is spread from person to person. People with pertussis usually spread the disease by coughing or sneezing while in close contact with others, who then breathe in the pertussis bacteria. Many infants who get pertussis are infected by older siblings, parents or caregivers who might not even know they have the disease (Bisgard, 2004 & Wendelboe, 2007). Symptoms of pertussis usually develop within 7–10 days after being exposed, but sometimes not for as long as 6 weeks.

While pertussis vaccines are the most effective tool we have to prevent this disease, no vaccine is 100% effective. If pertussis is circulating in the community, there is a chance that a fully vaccinated person, of any age, can catch this very contagious disease. If you have been vaccinated, the infection is usually less severe. If you or your child develops a cold that includes a severe cough or a cough that lasts for a long time, it may be pertussis. The best way to know is to contact your doctor.

Signs and Symptoms

<http://www.cdc.gov/pertussis/about/signs-symptoms.html>

Pertussis (whooping cough) can cause serious illness in infants, children and adults. The disease usually starts with cold-like symptoms and maybe a mild cough or fever. After 1 to 2 weeks, severe coughing can begin. Unlike the common cold, pertussis can become a series of coughing fits that continues for weeks.

In infants, the cough can be minimal or not even there. Infants may have a symptom known as "apnea." Apnea is a pause in the child's breathing pattern. Pertussis is most dangerous for babies. About half of infants younger than 1 year of age who get the disease are hospitalized. Learn more about [pertussis complications](#).

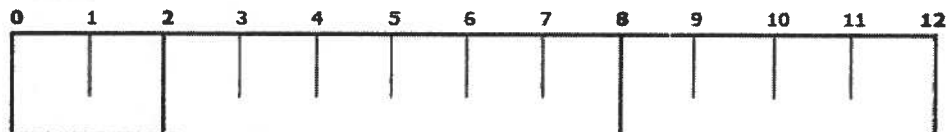
Pertussis can cause violent and rapid coughing, over and over, until the air is gone from the lungs and you are forced to inhale with a loud "whooping" sound. This extreme coughing can cause you to throw up and be very tired. The "whoop" is often not there and the infection is generally milder (less severe) in teens and adults, especially those who have been vaccinated.

Early symptoms can last for 1 to 2 weeks and usually include:

- Runny nose
- Low-grade fever (generally minimal throughout the course of the disease)
- Mild, occasional cough
- Apnea — a pause in breathing (in infants)

Disease Progression:

Weeks



**Stage 1
Catarrhal Stage**
May last 1 to 2 weeks

— Symptoms: runny nose, low-grade fever, mild, occasional cough — Highly contagious

Stage 2 - Paroxysmal Stage:

Lasts from 1-8 weeks; may extend to 10 weeks

Symptoms: fits of numerous, rapid coughs followed by "whoop" sound; vomiting and exhaustion after coughing fits (called paroxysms)

Stage 3 - Convalescent Stage

Lasts about 2-3 weeks; susceptible to other respiratory infections for many

Recovery is gradual. Coughing lessens but fits of coughing may return.

Because pertussis in its early stages appears to be nothing more than the common cold, it is often not suspected or diagnosed until the more severe symptoms appear. Infected people are most contagious up to about 2 weeks after the cough begins. Antibiotics may shorten the amount of time someone is contagious.

Would You Know Pertussis?

[Hear how the cough may sound](#)

It is important to know that not everyone with pertussis coughs or "whoops".

As the disease progresses, the traditional symptoms of pertussis appear and include:

- Paroxysms (fits) of many, rapid coughs followed by a high-pitched "whoop"
- Vomiting (throwing up)
- Exhaustion (very tired) after coughing fits

The coughing fits can go on for up to 10 weeks or more. In China, pertussis is known as the "100 day cough."

Although you are often exhausted after a coughing fit, you usually appear fairly well in-between. Coughing fits generally become more common and severe as the illness continues, and can occur more often at night. The illness can be milder (less severe) and the typical "whoop" absent in children, teens, and adults who have been vaccinated with a pertussis vaccine.

Recovery from pertussis can happen slowly. The cough becomes less severe and less common. However, coughing fits can return with other respiratory infections for many months after pertussis started.

Diagnosis and Treatment

<http://www.cdc.gov/pertussis/about/diagnosis-treatment.html>

Diagnosis

Pertussis (whooping cough) can be diagnosed by taking into consideration if you have been exposed to pertussis and by doing a:

- History of typical signs & symptoms
- Physical examination
- Laboratory test which involves taking a sample of secretions (with a swab or syringe filled with saline) from the back of the throat through the nose — see Figure 1 and video demonstrations.
- Blood test

Figure 1: Proper technique for obtaining a nasopharyngeal specimen for isolation of *Bordetella pertussis*

Image: Manual for the Surveillance of Vaccine-Preventable Diseases, 4th ed, 2008

Treatment

Pertussis is generally treated with antibiotics and early treatment is very important. Treatment may make your infection less severe if it is started early, before coughing fits begin. Treatment can also help prevent spreading the disease to close contacts (people who have spent a lot of time around the infected person). Treatment after three weeks of illness is unlikely to help because the bacteria are gone from your body, even though you usually will still have symptoms. This is because the bacteria have already done damage to your body.

There are several antibiotics available to treat pertussis. If you or your child is diagnosed with pertussis, your doctor will explain how to treat the infection. [Learn more about the antimicrobial treatment recommended by CDC for treatment of pertussis.](#)

Pertussis can sometimes be very serious, requiring treatment in the hospital. Infants are at greatest risk for severe complications from pertussis. View [photos](#) of an infant being treated for pertussis in the hospital.

If Your Child is Treated for Pertussis at Home

Do not give cough medications unless instructed by your doctor. **Giving cough medicine probably will not help and is often not recommended for kids younger than 4 years old.**

Manage pertussis and reduce the risk of spreading it to others by:

- Following the schedule for giving antibiotics exactly as your doctor prescribed.
- Keeping your home free from irritants - as much as possible - that can trigger coughing, such as smoke, dust, and chemical fumes.
- Using a clean, cool mist vaporizer to help loosen secretions and soothe the cough.
- Practicing good handwashing.
- Drinking plenty of fluids, including water, juices, and soups, and eating fruits to prevent dehydration (lack of fluids). **Report any signs of dehydration to your doctor immediately.** These include dry, sticky mouth, sleepiness or tiredness, thirst, decreased urination or fewer wet diapers, few or no tears when crying, muscle weakness, headache, dizziness or lightheadedness.
- Eating small, frequent meals to help prevent vomiting if occurring.

If Your Child is Treated for Pertussis in the Hospital

Your child may need help keeping breathing passages clear, which may require suctioning (drawing out) of thick respiratory secretions. Breathing is monitored and oxygen will be given, if needed. Intravenous (IV, through the vein) fluids might be required if your child shows signs of dehydration or has difficulty eating. Precautions, like practicing good hand hygiene and keeping surfaces clean, should be taken.

Complications

<http://www.cdc.gov/pertussis/about/complications.html>

Infants and Children

Pertussis (whooping cough) can cause serious and sometimes life-threatening complications in infants and young children, especially those who are not fully vaccinated.

In infants younger than 1 year of age who get pertussis, about half are hospitalized. The younger the infant, the more likely treatment in the hospital will be needed. Of those infants who are hospitalized with pertussis about:

- 1 in 4 (23%) get pneumonia (lung infection)
- 1 or 2 in 100 (1.6%) will have convulsions (violent, uncontrolled shaking)
- Two thirds (67%) will have apnea (slowed or stopped breathing)
- 1 in 300 (0.4%) will have encephalopathy (disease of the brain)
- 1 or 2 in 100 (1.6%) will die

Teens and Adults

Teens and adults can also get complications from pertussis. They are usually less serious in this older age group, especially in those who have been vaccinated with a pertussis vaccine. Complications in teens and adults are often caused by the cough itself. For example, you may pass out or fracture a rib during violent coughing fits.


In one study, less than 5% of teens and adults with pertussis were hospitalized. Pneumonia (lung infection) was diagnosed in 2% of those patients. The most common complications in another study of adults with pertussis were:

- Weight loss (33%)
- Loss of bladder control (28%)
- Passing out (6%)
- Rib fractures from severe coughing (4%)

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Resources for Adults

- Vaccine Information Statement (Td/Tdap)  (66 KB, 2 pages)
- Adolescent and Adult Vaccine Quiz